LISTING OF CLAIMS

1. (Currently Amended) An apparatus for checking the position of a mechanical part, more particularly a free end of an elongate tool [[(3), including]] comprising:

[[•]] a frame [[(5)]], stationary with respect to the mechanical part to be checked,

[[•]] a base [[(6)]] carrying a mechanical support [[(25)]], the base [[(6)]] and the frame [[(5)]] being [[mutually]] movable with respect to each other along a longitudinal feed direction [[(X)]],

[[•]] an emitter [[(20)]] for generating a light beam [[(21)]] along a trajectory transverse[[al]] with respect to the longitudinal feed direction [[(X)]], and a sensor [[(22)]], arranged along the trajectory of the light beam [[(21)]], the emitter [[(20)]] and the sensor [[(22)]] being coupled to the mechanical support [[(25)]] in mutually defined positions, the sensor [[(22)]] being adapted for providing signals indicative of [[the]] reception and interruption of reception of the light beam [[(21)]],

[[•]] a transducer device [[(9,10)]] for checking the [[mutual]] relative position between the base [[(6)]] and the frame [[(5), and]],

[[•]] a processing, display and control unit [[(12)]], connected to the sensor [[(22)]] and to the transducer device [[(9,10)]], for processing said signals of the sensor [[(22)]] and for identifying the [[mutual]] relative position between the base [[(6)]] and the frame [[(5) at the]] at said interruption of reception of the light beam [[(21)]], and

[[characterized in that the apparatus includes]] a coupling mechanism [[(24)]] between the mechanical support [[(25)]] and the base [[(6)]] adapted for enabling oscillations of the light beam [[(21)]] with respect to the base [[(6)]] substantially along a [[transversal]] reference surface, and [[the apparatus further including]] an activation device [[(26)]] and transmission elements [[(29,30)]] adapted for controlling said oscillations of the light beam [[(21)]] with respect to the base [[(6)]].

2. (Currently Amended) The apparatus according to claim 1, wherein the coupling mechanism [[(24)]] and the transmission elements [[(29,30)]] enable oscillations of the light beam [[(21)]] in a delimited area [[(33)]] of said reference surface.

3. (Currently Amended) The apparatus according to [[one of the preceding]] claim[[s]] 1, wherein the longitudinal feed direction [[(X)]] is substantially perpendicular to the reference surface.

4. (Currently Amended) The apparatus according to [[one of the preceding]] claim[[s]] 1, wherein said reference surface is substantially plane.

5. (Currently Amended) The apparatus according to [[one of the preceding]] claim[[s]] 1, wherein said coupling mechanism includes fulcrum devices [[(24)]] coupled to the mechanical support [[(25)]] and to the base [[(6)]].

6. (Currently Amended) The apparatus according to claim 5, wherein said devices [[(24)]] define an axis of oscillation that is substantially parallel with respect to the longitudinal feed direction [[(X)]].

7. (Currently Amended) The apparatus according to claim 6, wherein the fulcrum devices [[(24)]] are coupled to the mechanical support [[(25) in]] such [[a way]] that said axis of oscillation is substantially perpendicular to and substantially coplanar with the trajectory of the light beam [[(21)]].

8. (Currently Amended) The apparatus according to claim 7, wherein the activation device includes a motor [[(26)]] with a spindle [[(28) with]] having an axis of rotation that is substantially parallel with respect to the longitudinal feed direction [[(X)]], said transmission elements include a connecting rod [[(30)]] coupled at one end to the mechanical support [[(25)]] and at the other end to the spindle [[(28)]] of the motor [[(26)]], in an eccentric position with respect to the axis of rotation.

9. (Currently Amended) The apparatus according to [[one of the preceding]] claim[[s]] 1, wherein the light beam [[(21)]] has transverse[[al]] dimensions that do not exceed 2 mm.

10. (Currently Amended) The apparatus according to [[one of the preceding]] claim[[s]] 1, wherein the light beam [[(21)]] is a laser beam.

11. (Currently Amended) A method for checking an elongate tool [[(3)]], that is substantially arranged along a longitudinal direction [[(X)]] and includes a free end, by means of an apparatus [[(1)]] including an emitter [[(20)]] for generating a light beam [[(21)]] along a transversal trajectory and a sensor [[(22)]] for detecting the interruption of the light beam [[(21)]], a base [[(6)]], movable along the longitudinal direction [[(X)]] with respect to the tool [[(3)]] to be checked, that carries, by means of a coupling mechanism [[(24)]], said emitter [[(20)]] and said sensor [[(22)]], and a transducer device [[(9,10)]] for checking the mutual position between the base [[(6)]] and the tool [[(3)]] to be checked, the method including

[[a mutual feed]] displacing,[[ement]] along the longitudinal direction, [[(X) between]] the movable base [[(6) and]] relative to the tool [[(3)]] to be checked, thereby [[for]] causing [[the approach of]] the light beam [[(21) towards]] to approach the free end of the tool [[(3)]], and

[[a]] detecting[[on of]] the interruption of the light beam, [[(21)]] in the course of [[this]] said displacing[[ement]] step, when said light beam is interrupted by said free end of the tool,

[[the method is characterized in that the]] wherein oscillations of the light beam [[(21)]] with respect to the base [[(6)]] occur substantially along a [[transversal]] reference surface transverse to said longitudinal direction, and concurrently with the mutual feed displacement, the oscillations being enabled by the coupling mechanism [[(24)]] and being controlled by an activation device [[(26)]].

12. (Currently Amended) The method according to claim 11, wherein said oscillations of the light beam [[(21)]] have a preset frequency, said preset frequency and [[the]] a speed of the mutual feed displacement along the longitudinal direction [[(X) between]] of the movable base [[(6) and]] relative to the tool [[(3)]] are such that [[the]] initial interference between the free end of the tool [[(3)]] and said transverse reference surface causes the interruption of the light beam [[(21)]].

13. (Original) The method according to claim 12, wherein said preset frequency is not less than 10 Hz.

14. (Currently Amended) The method according to [[one of the]] claim[[s]] 11 [[to 13]], wherein the longitudinal direction [[(X)]] is substantially perpendicular to the transverse[[al]] reference surface.

15. (Currently Amended) The method according to claim 14, wherein said oscillations occur about a longitudinal axis that is substantially perpendicular to the trajectory of the light beam [[(21)]] and coplanar with it.

16. (Currently Amended) The method according to [[one of the]] claim[[s]] 11 [[to 15]], further [[including]] comprising:

performing an additional [[mutual]] relative displacement, along the longitudinal direction, [[(X)]] between the movable base [[(6)]] and the tool [[(3)]] to be checked, in a direction opposite with respect to said [[mutual feed]] displacing[[ement]] step, in order to cause the displacement of the light beam [[(21)]] away from the tool [[(3)]],

performing a second [[feed]] displacement in the same direction as said displacing step [[at the end of said additional displacement]], said oscillations of the light beam [[(21)]] with respect to the base [[(6)]] also occurring in the course of said second [[feed]] displacement, and

performing a second detection of the interruption of the light beam [[(21)]] during [[this]] said second [[feed]] displacement,

wherein said second [[feed]] displacement has a slower speed [[(V_2)]] with respect to the speed [[(V_1)]] of said [[mutual feed]] displacing[[ement]] step.

17. (Currently Amended) The method according to [[one of the]] claim[[s]] 11 [[to 15]], further [[including]] comprising:

performing an additional [[mutual]] relative displacement, along the longitudinal direction, [[(X)]] between the movable base [[(6)]] and the tool [[(3)]] to be checked, in a direction opposite with respect to said [[mutual feed]] displacing[[ement]] step, in order to cause [[the displacement]] movement of the light beam [[(21)]] away from the tool [[(3)]], said oscillations of the light beam [[(21)]] with respect to the base [[(6)]] also occurring in the course of said additional [[mutual]] relative displacement, and

performing an additional detection of the [[ceasing of the interruption of the]] light beam [[(21)]] during said additional [[mutual]] relative displacement, wherein said

additional [[mutual]] relative displacement has a slower speed [[(V_2)]] with respect to the speed [[(V_1)]] of said [[mutual feed]] displacing[[ement]] step.

18. (New) The apparatus according to claim 1, wherein said reference surface is transverse to said longitudinal feed direction.